

Serial No. 08/913,803
Express mail label No. EV326739110US

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Gilles Boccon-Gibod et al.
Serial No. : 08/913,803
Filed : SEPTEMBER 22, 1997
For : TRICK PLAY MODES FOR PRE-ENCODED VIDEO
Art Unit : 2615
Examiner : C. Onuaku

CORRECTED CLAIM 16 IN APPEAL

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FEB 13 2004

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Technology Center 2600

Sir:

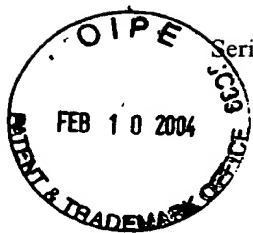
In the subject patent application, in response to the Examiner's telephone interview and paper number 25, a corrected Appeal Brief is submitted herewith.

Respectfully submitted
Gilles Boccon-Gibod et al.

February 10, 2004

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before The Board Of Patent Appeals And Interferences

Applicant : Gilles Boccon-Gibod et al.
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BRIEF ON APPEAL

May It Please The Honorable Board:

Appellants appeal the final rejection of Claims 8-10, 16 and 17 of the above-identified application in the Final Rejection mailed November 19, 2002. The fee of \$320.00 for filing this Brief is to be charged to Deposit Account 07-0832. Please charge any additional fee or credit any overpayment to the above-identified Deposit Account.

Appellants waive an Oral hearing for this appeal.

Three copies of the Brief are enclosed. This page is also submitted in duplicate for fee charging purposes.

I. REAL PARTY IN INTEREST

The real party in interest of Application Serial No. 08/913,803 is the assignee of record:

Thomson Consumer Electronics, Inc.
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Princeton, New Jersey 08540
United States of America

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF THE CLAIMS

Claims 8 - 10, 12-14, 16 and 17 are pending in the application after consideration of the response to the Final Rejection. Claims 8-10, 16 and 17 stand rejected and Claims 12-14 have been indicated as allowable.

Claims 8 - 10, 16 and 17, all the rejected claims, are appealed.

IV. STATUS OF AMENDMENTS

All amendments were entered and are reflected in the claims included in Appendix I.

V. SUMMARY OF THE INVENTION

This invention is directed to an apparatus for reproducing digitally compressed video material at a plurality of speeds different from real time or normal play speed. The apparatus includes a storage device for storing the plurality of video program records. Each program record comprises a set of digitally encoded signal records representative of the program. Each record of the set is processed to provide a specific viewed program delivery rate, for example a play speed record will deliver program content at a real time rate, but an exemplary record with a trick-play speed of 7 times will produce program content that is presented seven times faster than the play speed record of the set. The encoded signal records of each set are linked to one another at predetermined jump points to permit the user to jump between temporally similar program content present in each of the different trick-play speed records of the set. Each

set of digitally encoded signal records has records of differing sizes for reproduction of the complete stored program at a plurality of speeds. This invention enables a user of a digital video program or video stream to view the programming at a normal play-speed or at a number of different trick-play speeds with selection between the different trick-play speeds records of the set occurring at temporally similar program locations.

The present claimed invention encodes a set of signal records, each signal record of the set being a copy of the complete program but processed differently. For example, as disclosed on page 3, lines 5 - 14 of the specification and in detail on page 5, lines 11 - 22 with reference to Figure 2, a set of records may include a video stream encoded with all frames of the program producing a normal speed reproduction, two video streams encoded with a subset of frames to allow forward and backward reproduction of the program at a speed seven (7) times faster than a normal speed reproduction, and two video streams encoded to allow forward and backward reproduction of the program at twenty-one (21) times faster than a normal speed reproduction.

The signal records encoded for different program delivery speeds will have different sizes, for example signal record encoded for seven times normal speed comprises only every seventh frame. Records encoded for faster display speeds will have fewer frames and therefore smaller size. However, each record is a temporal sampling of the complete program. Playback, reproduction or readout of the signal records of various sizes and direction, e.g., forward and backward, must be presented to a video display device with substantially similar scanning or synchronizing frequencies. Hence, if a video display requires 30 pictures or frames per second to operate normally, then 30 pictures or frames per second must be delivered during the "replay" of any selected record in the program set. Thus with an exemplary trick-play speed of seven (7) times (faster than a normal play speed reproduction) only one frame out of every seven program frames is present in the

record. Hence when replayed, reproduced or readout in accordance with an exemplary display rate of 30 frames per second, the resulting programming or program content is displayed for viewing at a non-real time rate seven times faster than normal play speed.

The trick-play playback of the complete program contained in a particular signal record will occupy less time than, for example one seventh, of playback time of the normal play record of the set which, as explained comprises a full number of frames.

All the signal records of each video program are inter-linked to each other through the use of tables that correlate logically corresponding locations or jump points within each signal record to allow switching between the signal records of the program set at temporally corresponding program locations thereby ensuring that trick-play initiation or cessation occurs at substantially identical program locations.

VI. ISSUES

Whether the subject matter of Claims 8 - 10, 16 and 17 is anticipated by Abecassis and should stand rejected under 35 U.S.C. 102(e).

VII. GROUPING OF THE CLAIMS

Claims 8 and 16 are independent claims. Claims 9 and 10 are dependent on Independent Claim 8 and Claim 17 is dependent on Independent Claim 16.

VIII. ARGUMENTS

Abecassis neither anticipates nor makes unpatentable the present claimed invention. Thus, reversal of the Final Rejection (herein after termed "rejection") of claims 8 - 10, 16 and 17 under 35 U.S.C. 102(e) over Abecassis is respectfully requested.

Overview of the Cited Reference

The Examiner rejected Claims 8 - 10, 16 and 17 under 35 U.S.C. 102(e) as being anticipated by Abecassis (U.S. Patent No. 6,091,886).

Abecassis teaches a video device for the automated selective retrieval of non-sequentially stored video segments of a video program. The segments are pieces of discontinuous program content. In response to a viewer's pre-established content preferences, selected segments are combined with the main video program to form a seamless video program.

Abecassis provides a variable content program thereby enabling diverse audiences to independently watch the same video program but edited to include or omit scenes based upon the preferences of each independent viewing audience, as described in column 4, lines 9 - 19. For example, a mature audience will be shown the video program edited to include mature segments while a younger audience will be shown the same video program edited to substitute the mature segments with segments more suited to the age, gender and disposition of the audience.

Rejection of Claim 8

In rejecting independent Claim 8 the Examiner states that Abecassis teaches a video device for the automated selective retrieval of non-sequentially stored video segments of a video program. This description of Abecassis is in contradiction to the present claimed invention. Each signal record of the present invention as claimed in Claim 8 is representative of the complete video program. Specifically, claim 8 recites "a plurality of video program records, wherein each program record having a set of digitally encoded signal records representative of said each program". Each signal record comprises some proportion of frames from

the entire video program from start to finish. However, even as applied by the Examiner, Abecassis stores non-sequential segments of a video program.

The Examiner references Figure 5 of Abecassis to show a memory 515 as in the present claimed invention. However, contrary to the assertion of the Examiner, Abecassis neither discloses nor suggests, applicants'

"...means for storing a plurality of video program records, each program record having a set of digitally encoded signal records representative of each program...",

as recited in Claim 8 and disclosed throughout the specification. The Examiner references column 14, lines 3 - 12 of Abecassis as disclosing such a memory. In this passage Abecassis only recites storage of viewer preferences in a non-volatile resident memory, fixed or removable memory subsystem, user's optical read/write access card or electronic memory card or read/write video/data laser disc. However, Abecassis neither discloses nor suggests applicants' means for storing as recited in claim 8, wherein,

"...means for storing a plurality of video program records, wherein each program record having a set of digitally encoded signal records representative of said each program...".

The Examiner further references Figure 5 and column 13, lines 60 - 62 of Abecassis as disclosing the linking means of the present claimed invention. The present invention recites in Claim 8, linking the signal records to one another at predetermined jump points. The jump points are logically identical frames in each of the signal records. The jump points are points for initiating viewer selected reproduction at a different speed. Abecassis neither discloses nor suggests,

"...means for linking said encoded signal records of each said set to one another at predetermined jump points for selecting reproduction from different ones of said set...".

as recited in Claim 8. In fact, the passage in Abecassis cited by the Examiner refers to searching for viewer or generic preferences upon playing of a program for applying to the program segment map. The program is then edited based upon the viewer preference. This capability of Abecassis is unlike applicants' recited invention which jumps between signal records in order to increase or decrease the speed at which the program content is presented. Abecassis is not concerned with the speed of program content playback or delivery as present in the claimed invention, in fact nowhere in the teaching of Abecassis are the terms trick-play or playback speed used or suggested. Abecassis is specifically concerned with the editing of a program so that different program content may be viewed by different audiences according to their individual preferences.

The Examiner further asserts that Figures 3A, 3B, 3C, 3D and column 9, line 19 to column 10, line 46 of Abecassis discloses that,

“...each said set of digitally encoded signal records has records of differing sizes for reproducing at a plurality of speeds...”,

as recited in the present claimed invention. The Examiner goes on to explain that Abecassis shows a conventional program with differently rated segments and editing of the program to remove unwanted segments in order to produce a variable content program that suits a particular set of user preferences. Contrary to the assertions of the Examiner, Abacasis makes no mention nor suggestion of each program having a set of encoded records representing the program. Furthermore Abacasis makes no mention nor suggestion of reproducing at a plurality of speeds. Absent teachings regarding sets and reproducing at a plurality of speeds, Abacasis neither discloses nor suggests that signal records forming the set have records of differing sizes.

Abecassis is directed to the editing of a stored program by removing unwanted segments and adding wanted segments based on user preferences. The length or program duration produced by Abecassis may be changed based upon the preferences of the user. However, the speed at which the program content is

presented to the viewer remains unchanged in Abecassis, i.e. speech and music are not changed in pitch and motion portrayal within each scene is unaffected by the editing of Abecassis.

In the present claimed invention applicants' recite a set of program copies which when reproduced present the program content at a non-realtime or trick-play rate. Applicants select different trick-play speeds by jumping between different program records within the set of program records. With respect, the Examiner appears to confuse program length and playing time with the speed at which the program content is delivered (e.g. normal speed, fast forward at 7X speed, fast forward at 21X speed, fast reverse at 7X speed and fast reverse at 21X speed).

The Examiner asserts at page 7, line 3 of his final response dated 11/19/2002 that,

“...Each version of the program segment is reproduced at different speed since, for example, each time a segment of a program is skipped, the remaining segments of the program are reproduced faster than the previous program before the single element was skipped...”.

This assertion is without any support in the teaching of Abecassis. Abecassis makes no suggestion that, as a consequence of his editing process the speed of the remaining program is increased as the Examiner asserts.

Abecassis teaches editing to remove unwanted segments based on user preferences. For example, if the editing process of Abecassis results in a movie that is only half as physically long as the original, then the duration is halved. However, although the edited movie duration is only half as long as the original, the program content is still presented to the viewer with motion portrayed in real time and with dialog and music having normal pitch. Although the program duration is halved Abecassis's editing cannot function as the Examiners asserts where,

“...the remaining segments of the program are reproduced faster than the previous program before the single element was skipped...”.

If Abecassis's editing process is considered to be analogous to editing a movie on film, then cutting out various numbers of film frames can have no effect on the film drive mechanism of the projector. Hence the film runs through the projector at the same speed and consequently presents to the viewer the same standardized number of pictures (24) per second. Abecassis shortens (or changes) the viewing time but discloses no mechanism to change the constant speed at which the program content is presented to the viewer.

Abecassis neither discloses nor suggests applicants' recited

"...storing a plurality of video program records...",

nor does Abecassis disclose or suggest that each program record has,

"...a set of digitally encoded signal records representative of said each program...".

Furthermore Abecassis makes no mention nor suggestion of applicants',

"...linking said encoded signal records of each said set to one another at predetermined jump points for selecting reproduction from different ones of said set...".

Since Abecassis fails to disclose or suggest storing a plurality of video program records where each program comprises a set of records representative of each program, and because Abecassis makes no mention nor suggestion of predetermined jump points for selecting between ones of the set for reproduction at a plurality of speeds, Abecassis clearly lacks many of applicants' recited elements. It is respectfully submitted that the rejection under 35 U.S.C. 102(e) is inappropriate and applicants' claim 8 is not anticipated by Abecassis.

Rejection of Claim 9

In rejecting Claim 9, the Examiner again cites Figures 3A, 3B, 3C, 3D and column 9, line 19 to column 10, line 46 of Abecassis. However, as previously stated, Abecassis neither discloses nor suggests reproducing the program at different speeds as in the present claimed invention. Furthermore, it is

respectfully submitted that the segments of Abecassis cannot be compared to the signal record of the present invention. The segments disclosed in Abecassis are sections or portions of the video program to be used for editing. However, the records of the present claimed invention each represent an entire program record. Abecassis edits the program by inserting or deleting segments at different points along the length of the video program. This is different than the grouping of the predetermined jump points specific to transitions between similar temporal program events as in the present claimed invention. Each record applicants' recite represents an entire program and the jump points match temporal program events within each record to the other records of the set, applicants jump points allow the user to change playback speed without any temporal discontinuity in the programming. It therefore follows that Abecassis neither discloses nor suggests that predetermined jump points are grouped specific to transitions between similar temporal program events as claimed in Claim 9. In view of the above, it is respectfully submitted that the present invention as recited in claim 9 is not anticipated by Abecassis.

Rejection of Claim 10

The Examiner states,

“...Abecassis discloses wherein the predetermined jump points represent addresses of digital images within each set which substantially correspond with one another...”.

As discussed previously, Abecassis discloses only a single program with a plurality of program segments used to edit the program based upon user preferences. The Examiner's assertion is contrary to the basic objective of Abecassis which is to remove content, rather than jump to images which substantially correspond with one another. Furthermore, lacking applicants' sets, Abecassis is without substantially corresponding digital images to jump between. The "jump points" of Abecassis define positions within the single program at which the preferential editing can be performed to insert other stored program segments. In addition the

image that is inserted is not disclosed by Abecassis to substantially correspond with the image in the main program. In view of the above, it is respectfully submitted that the present invention as recited in claim 10 is not anticipated by Abecassis.

Rejection of Claim 16

Claim 16 includes limitations similar to Claim 8 and thus the discussion above with respect to the rejection of claim 8 also applies to claim 16.

The Examiner states that "Abecassis teaches a video device for the automated selective retrieval of non-sequentially stored video segments of a video program from a single program source". The Examiner's preceding characterization illustrates that Abecassis's teaching is essentially contrary to applicants' claim 16 invention. Applicants' recite a,

"...storage device having stored therein compressed program records, each program record containing multiple versions where each version of said multiple versions allows reproduction at a different play speed..."

The Examiner admits Abecassis stores non-sequential video segments. Such non-sequential video segments cannot be considered to represent applicants' program record containing multiple versions where each version of the multiple versions allows reproduction at a different play speed. Furthermore Abecassis offers no teaching or suggestion that these "non-sequential video segments" have any special property which allows reproduction at different play speeds as the Examiner asserts.

The Examiner references Figure 5 of Abecassis and asserts that it shows a memory as in the present claimed invention. The Examiner offers five citations from Abecassis, however, none offer any suggestion of a program record containing multiple versions where each version of the multiple versions allows reproduction

at a different play speed. One of the Examiner's citations column 27, lines 65 - 66 actually discloses different rated versions are produced from "the same film".

In addition Abecassis repeatedly discloses use of a single film, single program source or single video source, for example, Column 4, line 61.

"...it is an object of the present invention to provide a device comprising integrated random access video technologies and video software architectures that furnishes a viewer the automated selective retrieval of non-sequentially stored, parallel, transitional, and overlapping video segments from a single variable content program source..."

Column 5, line 25,

"It is yet other objects of the present invention to provide a variety of reading architectures that produce a seamless reading of sequential and non-sequential segments of a variable content program from a single video source."

Column 5, line 56,

"...the version addressing each viewer's particular tastes and preferences, reside harmoniously within a single variable content motion picture..."

Clearly Abecassis teaches use of a single program and therefore lacks applicants' recited multiple versions.

Furthermore, contrary to the Examiners assertion (Final Action page 9, line 2), nowhere in Abecassis is it mentioned or suggested that editing consequently

"...allows reproduction at a different play speed..."

In addition, Abecassis offers no suggestion that these non-sequential video segments are in some way capable of facilitating replay at different speeds, unlike applicants' disclosure as filed, which for example at page 2a, lines 14 - 23, reveals how applicants' ones of the multiple program versions provide trick-play image streams. Furthermore at page 16, line 23 of the application as filed applicants' disclose the use of trick-play specific streams temporally and spatially processed unlike Abecassis who makes no mention of trick-play modes or that editing facilitates reproduction at a different play speed.

Abecassis teaches the use of tables which can contain user preferences and segment data. However, Abecassis provides no teaching as applicants' recite wherein,

"...tables of predetermined temporally similar addresses within each version of said each program record for selection between the different play speed records..."

Furthermore, tables as applicants recite preclude Abecassis's fundamental objective of removing or replacing content with different material of greater user acceptability. Abecassis has no logical reason to provide tables that facilitate editing or selection between "temporally similar addresses within each version of said each program record". Clearly the teaching of Abecassis cannot be considered to anticipate applicants' claim 16 invention.

Abecassis discusses editing a program to change or delete content in accordance with user preferences. Such edits can change the length, duration or running time of the program. To repeat the film analogy, Abecassis by adding or removing film frames to satisfy user preferences may change the physical length of the film. However, since film is projected theatrically at a standard rate of 24 frames per second the duration of the edited film may change, but the speed at which the program content is delivered remains unchanged thereby providing a real-time portrayal of content and motion. Reproduction of a program according to the present claimed invention permits the reproduction of the complete program at different speeds, or stated differently, the present claimed invention permits non-real-time viewing of the program content.

In the Final Action page 9, line 11 the Examiner asserts that,

"...Each version of the program is reproduced at different speed since, for example, each time a segment of a program is skipped, the remaining segments of the program are reproduced faster than the previous program before the single segment was skipped. If, on the other hand, two segments are skipped, the remaining program segment, less the two skipped segments, are reproduced even faster than when one segment was skipped or when no version was skipped, and so on."

This assertion is without support in the teachings of Abecassis. Abecassis makes no suggestion that, as a consequence of editing the speed of the remaining program is increased. With respect, the Examiner appears to confuse the length and play time of a program with the reproduction speed or content delivery rate.

By way of explanation, film and television portray motion in real-time by ensuring that the image capture (source) rate (Fps) is matched by the image display rate (Fps). To achieve trick play reproduction, that is non-real time motion portrayal, requires that the one to one image capture (source) to display ratio is changed. The Examiner recognizes the need to provide a playback signal with a standardized frame rate, for example nominally 30 Hz in the US. Thus to permit a non-real time viewing rate on a display operating with the standardized picture rate requires that the image rate is increased. Applicants' invention provides a set of program versions encoded, as described previously, such that when each program (or captured image) is viewed at a rate of, for example, 30 pictures per second, the program content will be displayed in a non-real time, trick-play mode. Applicants' disclose various encoding options to enable the formation of the recited multiple versions or program set, each of which provides a speed specific trick-play mode. In addition applicants' invention recognizes the need to be able to change between trick mode speeds without temporal discontinuity of the programming.

Both Abecassis and applicants provide a playback signal with a standardized display frame rate, but although program editing by Abecassis may lessen the duration, the reproduction rate remains unchanged and the same as the unedited version. Abecassis makes no suggestion that editing is in some way related the speed or rate at the program is delivered. Abecassis is silent regarding trick-play operation and as stated previously fails to use the words trick-play or play speed in his teachings.

The Examiner further rejects claim 16 in view of Abecassis citing column 13, line 14 to column 14, line 23 as reciting the control means responsive to user program selection for selecting one of said program records. The Examiner posits that the cited section discloses,

"...the process of editing out unwanted portions of a variable content program as requested by a viewer wherein frames are omitted and added to provide a continuous transparent edited version of any segment, thereby varying the final new reproduction speed which varies on the basis of the extent of the editing of the original program..."

This assertion exemplifies a misunderstanding of not only the present claimed invention but also the teaching of Abecassis. Claim 16 is not concerned with editing in or out portions of a program. In fact the present claimed invention is not concerned with editing the program at all. As discussed previously, it is the object of the present invention to facilitate changing the reproduction speed of a stored program by invisibly jumping between multiple program versions. Abecassis provides what is known as parental control and privacy software having the ability to protect children from inappropriate video content.

Abecassis neither discloses nor suggests a control means providing user selection between multiple programs and user selection of program play speed as applicants recite,

"...control means responsive to user program selection for selecting one of said program records, and in accordance with a play speed selection selecting one of said multiple versions..."

In view of the above, it is respectfully submitted that the present invention as recited in claim 16 is not anticipated by Abecassis.

Rejection of Claim 17

Claim 17 is directed to jumping to a position in another record which precedes the temporally similar address within the current replay record.

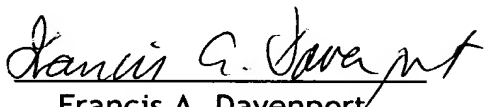
Applicants' concept of using a temporal offset when jumping between records of the set is neither disclosed nor suggested by Abecassis. In fact such an action would be contrary to the purpose of Abecassis, i.e. producing a seamless edited program. In view of the above, it is respectfully submitted that the present invention as recited in claim 17 is not anticipated by Abecassis.

IX. CONCLUSION

The Examiner's interpretation and understanding of Abecassis appears to be fundamentally flawed. Hence the Examiner's application of the teachings of Abecassis are similarly flawed. Applicants therefore respectfully submit that the claims of the application satisfy the requirements of 35 U.S.C. § 102, and removal of the rejections of claims 8 - 10, 16 and 17 is respectfully requested.

Respectfully submitted,
Gilles Boccon-Gibod et al.

10 February, 2004

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APPENDIX IAPPEALED CLAIMS

8. An apparatus for reproducing video programs, comprising:
means for storing a plurality of video program records, wherein each program record having a set of digitally encoded signal records representative of said each program;
means for linking said encoded signal records of each said set to one another at predetermined jump points for selecting reproduction from different ones of said set; and,
wherein each said set of digitally encoded signal records has records of differing sizes for reproduction at a plurality of speeds.
9. The apparatus of claim 8, wherein said predetermined jump points are grouped specific to transitions between similar temporal program events for reproduction at differing speeds.
10. The apparatus of claim 8, wherein said predetermined jump points represent addresses of digital images within each said set which substantially correspond with one another.
16. An apparatus for reproduction of compressed digital images at a plurality of speeds, said apparatus comprising:
a storage device having stored therein compressed program records, each program record containing multiple versions where each version of said multiple versions allows reproduction at a different play speed, and tables of predetermined temporally similar addresses within each version of said each program record for selection between the different play speed records;
transducing means for reproducing images from said compressed program records; and,

control means responsive to user program selection for selecting one of said program records, and in accordance with a play speed selection selecting one of said multiple versions, said control means being additionally responsive to user determined new play speed for reading said tables and generating predetermined addresses within another one of said multiple versions for transducing in correspondence with said user determined new play speed.

17. The apparatus of claim 16, wherein said images are reproduced from a time which precedes the preceding version.

APPENDIX IILIST OF REFERENCES

<u>U.S. Patent No.</u>	<u>Issue Date</u>	<u>Inventors</u>
6,091,886	July 18, 2000	Max Abecassis

BRIEF ON APPEAL
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